

What is claimed is:

- 1    1. A method for a processor to access data in a memory, the method  
2    comprising:
  - 3                 receiving a request to read a file stored in the memory, the memory
  - 4                 having a fragmented array of files across a single partition;
  - 5                 building a look up table (LUT) for the memory;
  - 6                 storing at least temporarily the LUT in the processor;
  - 7                 accessing the LUT in the processor to create an index table which
  - 8                 specifies a plurality of addresses for the file;
  - 9                 storing the index table in the memory.
- 1    2. A method as in claim 1 wherein the memory is a flash memory.
- 1    3. A method as in claim 1 wherein the memory is a SmartMedia;
- 1    4. A method as in claim 1 wherein building a lookup table comprises parsing the  
2    memory's File Allocation Table to find clusters for all files located on the memory.
- 1    5. A method as in claim 1 wherein building a lookup table comprises converting  
2    file clusters associated with a file into logical sectors.
- 1    6. A method as in claim 5 wherein building a lookup table further comprises  
2    mapping the logical sectors of the files to their corresponding physical sectors.

- 1    7. A method as in claim 1 wherein storing the LUT comprises storing the LUT
- 2    into a Digital Signal Processor (DSP).
  
- 1    8. A method as in claim 1 wherein creating an index table comprises utilizing the
- 2    LUT to create an index table which specifies physical addresses for each file.
  
- 1    9. A method as in claim 1 wherein the index table in the memory comprises a
- 2    table of records readable by the processor.
  
- 1    10. A method as in claim 9 wherein the processor is a Digital Signal Processor.
  
- 1    11. A method for a processor to write data to a memory, the method comprising:
  - 2            receiving a request to write a file to the memory, the memory
  - 3            having a fragmented array of files across a single partition;
  - 4            determining the size of the file;
  - 5            writing the file to the memory;
  - 6            building a look up table (LUT) for the memory;
  - 7            storing at least temporarily the LUT in the processor;
  - 8            accessing the LUT in the processor to create an index table which
  - 9            specifies a plurality of addresses for the file;
  - 10          storing the index table in the memory.
  
- 1    12. A method as in claim 11 wherein the memory is a flash memory.

- 1    13. A method as in claim 11 wherein the memory is a SmartMedia;
  
- 1    14. A method as in claim 11 wherein writing the file to the memory comprises  
2    searching a file allocation table (FAT) to find empty space within the memory to  
3    store the file.
  
- 1    15. A method as in claim 11 wherein writing the file to the memory comprises  
2    allocating empty clusters within flash memory for the file.
  
- 1    16. A method as in claim 11 wherein writing the file to the memory comprises  
2    storing the file in empty clusters in the memory.
  
- 1    17. A method as in claim 11 wherein building a lookup table comprises parsing  
2    the memory's File Allocation Table to find clusters for all files located on the  
3    memory.
  
- 1    18. A method as in claim 11 wherein building a lookup table comprises  
2    converting file clusters associated with a file into logical sectors.
  
- 1    19. A method as in claim 18 wherein building a lookup table further comprises  
2    mapping the logical sectors of the files to their corresponding physical sectors.

1    20. A method as in claim 11 wherein storing the LUT comprises storing the LUT  
2    into a Digital Signal Processor (DSP).

1    21. A method as in claim 11 wherein creating an index table comprises utilizing  
2    the LUT to create an index table which specifies physical addresses for each file.

1    22. A method as in claim 11 wherein the index table in the memory comprises a  
2    table of records which can be read by a processor.

1    23. A method as in claim 22 wherein the processor is a Digital Signal Processor.

1    24. A computer readable storage medium containing executable computer  
2    program instructions which when executed cause a method for a processor to  
3    access data in a memory, the method comprising:  
4                 receiving a request to read a file stored in the memory, the memory  
5    having a fragmented array of files across a single partition;  
6                 building a look up table (LUT) for the memory;  
7                 storing at least temporarily the LUT in the processor;  
8                 accessing the LUT in the processor to create an index table which  
9    specifies a plurality of addresses for the file;  
10                 storing the index table in the memory.

1    25. A computer readable storage medium as in claim 24 wherein the memory is  
2    a flash memory.

1    26. A computer readable storage medium as in claim 24 wherein the memory is  
2    a SmartMedia;

1    27. A computer readable storage medium as in claim 24 wherein building a  
2    lookup table comprises parsing the memory's File Allocation Table to find  
3    clusters for all files located on the memory.

1    28. A computer readable storage medium as in claim 24 wherein building a  
2    lookup table comprises converting file clusters associated with a file into logical  
3    sectors.

1    29. A computer readable storage medium as in claim 28 wherein building a  
2    lookup table further comprises mapping the logical sectors of the files to their  
3    corresponding physical sectors.

1    30. A computer readable storage medium as in claim 24 wherein storing the LUT  
2    comprises storing the LUT into a Digital Signal Processor (DSP).

1    31. A computer readable storage medium as in claim 24 wherein creating an  
2    index table comprises utilizing the LUT to create an index table which specifies  
3    physical addresses for each file.

1    32. A computer readable storage medium as in claim 24 wherein the index table  
2    in the memory comprises a table of records readable by the processor.

1    33. A computer readable storage medium as in claim 32 wherein the processor  
2    is a Digital Signal Processor.

1    34. A computer readable storage medium containing executable computer  
2    program instructions which when executed cause a method for a processor to  
3    write data to a memory, the method comprising:

4                 receiving a request to write a file to the memory, the memory

5    having a fragmented array of files across a single partition;

6                 determining the size of the file;

7                 writing the file to the memory;

8                 building a look up table (LUT) for the memory;

9                 storing at least temporarily the LUT in the processor;

10                accessing the LUT in the processor to create an index table which

11    specifies a plurality of addresses for the file;

12                storing the index table in the memory.

1    35. A computer readable storage medium as in claim 34 wherein the memory is  
2    a flash memory.

1    36. A computer readable storage medium as in claim 34 wherein the memory is  
2    a SmartMedia;

1    37. A computer readable storage medium as in claim 34 wherein writing the file  
2    to the memory comprises searching a file allocation table (FAT) to find empty  
3    space within the memory to store the file.

1    38. A computer readable storage medium as in claim 34 wherein writing the file  
2    to the memory comprises allocating empty clusters within flash memory for the  
3    file.

1    39. A computer readable storage medium as in claim 34 wherein writing the file  
2    to the memory comprises storing the file in empty clusters in the memory.

1    40. A computer readable storage medium as in claim 34 wherein building a  
2    lookup table comprises parsing the memory's File Allocation Table to find  
3    clusters for all files located on the memory.

1    41. A computer readable storage medium as in claim 34 wherein building a  
2    lookup table comprises converting file clusters associated with a file into logical  
3    sectors.

1    42. A computer readable storage medium as in claim 41 wherein building a  
2    lookup table further comprises mapping the logical sectors of the files to their  
3    corresponding physical sectors.

1    43. A computer readable storage medium as in claim 34 wherein storing the LUT  
2    comprises storing the LUT into a Digital Signal Processor (DSP).

1    44. A computer readable storage medium as in claim 34 wherein creating an  
2    index table comprises utilizing the LUT to create an index table which specifies  
3    physical addresses for each file.

1    45. A computer readable storage medium as in claim 34 wherein the index table  
2    in the memory comprises a table of records which can be read by a processor.

1    46. A computer readable storage medium as in claim 45 wherein the processor  
2    is a Digital Signal Processor.